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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,197	04/20/2004	Ying-Yao Lin	REAP0028USA4	3196
27765	7590	11/04/2005	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			NGUYEN, LINH V	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/709,197

Applicant(s)

LIN ET AL.

Examiner

Linh V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-24 is/are allowed.
- 6) ☒ Claim(s) 10-12, 15-17 and 20 is/are rejected.
- 7) ☒ Claim(s) 13, 14, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/12/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response communication filed on 9/9/05. Claims 1 – 9 have been canceled. Claims 16 – 24 have been added. Claims 10 – 24 remain in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 10, 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated Khoury et al. (hereinafter “Khoury”) U.S. patent No. 5,912,589.

Regarding claim 10, Fig. 3 of Khoury discloses a proportional_to_Vt voltage amplifier (70), comprising: a transconductance unit (54) for generating a first current (IREF) according to a first input voltage (VC); and a transresistance unit (74, 72), coupled to a reference voltage (VRP), for generating a first output voltage (VRN) according to the first current (IREF), wherein the difference between the first output voltage (VRN) and the reference voltage (VRP) is proportional to a thermal voltage ($VRN - VRP = -K4VT$).

Regarding claim 12, Fig. 3 of Khoury further discloses a first current mirror (59, 59'), coupled to the transconductance unit (54), for generating a second current (IREF') according to the first current (IREF).

Regarding claim 15, wherein the proportional_to_Vt voltage amplifier (70, 54) is a half circuit of a differential proportional_to_Vt amplifier (52).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11 , 16, 17 and 20 and rejected under 35 U.S.C. 103(a) as being unpatentable over Khoury as applied to claim 10 above, and further in view of Sakurai Pub.No.: US 2003/0058047.

Regarding claims 11 and 16, Khoury as applied to claim 10 above, does not explicitly disclose the transconductance unit (54) comprises: an operational amplifier having a first input end, a second input end, and an output end, wherein the first input end couples to the first input voltage; and a first resistor having one end being coupled to the second input end and the output end of the operational amplifier, and the other end being coupled to ground; wherein the first current flows through the first resistor.

Fig. 4 of Sakurai discloses a transconductance unit comprising: an operational amplifier (41) having a first input end (+), a second input end (-), and an output

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end(N41), wherein the first input end couples to the first input voltage (V_{bg}); and a first resistor(R41) having one end being coupled to the second input end (-) and the output end (N41) of the operational amplifier, and the other end being coupled to ground (Ground); wherein the first current flows (current of N41) through the first resistor (R41).

Khoury and Sakurai are common subject matter for current generator with mirror current. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated the transconductance unit taught by Sakurari into the transconductance of Khoury et al. for the purpose of providing a constant current generation and good temperature characteristic can be obtained in terms of gain and linearity (paragraph 0049 of Sakurai).

Regarding claim 17, Fig. 3 [19] of Khoury modified by Sakurai as applied to claim 16 above, further discloses a first current mirror (59, 59'), coupled to the operation amplifier, for generating a second current (I_{REF}') according to the first current (I_{REF}).

Regarding claim 18, Fig. 3 [19] of Khoury modified by Sakurai as applied to claim 16 above, further discloses wherein the proportional_to_Vt voltage amplifier (70) is a half circuit of a differential proportional_to_Vt amplifier (52).

Allowable Subject Matter

6. Claims 13, 14, 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claims 13 and 18, the prior art does not teach or suggest wherein the transresistance unit comprises: a first transistor for receiving the reference voltage; a second transistor having first end coupled to the first current mirror, wherein the second transistor is for generating the first output voltage; a second current mirror coupled to the first transistor and the second transistor; and a first bias current source coupled to the first transistor and the second transistor for providing a first bias current.

9. Claims 21 – 24 are allowed. With respect to claim 21, the claim is allowed for the same reason as of claims 13 and 18 above.

Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh Van Nguyen whose telephone number is (571)

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272-1810. The examiner can normally be reached from 8:30 – 5:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Robert Pascal can be reached at (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (571-273-8300) for regular communications and (571-273-8300) for After Final communications.

10/28/05

Linh Van Nguyen

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A handwritten signature in black ink, appearing to read 'Linh Van Nguyen', written in a cursive style.